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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,637	10/30/2003	Sivapa Kia Ganapathiappan	10010060-6	3390
7590	04/08/2004		EXAMINER	ZALUKAEVA, TATYANA
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/698,637	GANAPATHIAPPAN, SIVAPA KIA
	Examiner Tatyana Zalukaeva	Art Unit 1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 30 October 2003.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 13-16 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 13-16 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim s13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of claim 13 recites “ polymer prepared by polymerization...” which means that component monomers are polymerized to prepare a (co)polymer. However, the components are...” monomer...polymerized through ATP...” and a “ monomer polymerized in an emulsion...”. If the body of claims defines the invention, than it will not be a copolymer but a composition (mixture of polymers previously made). If the preamble governs then the unsaturated hydrophilic and hydrophobic containing monomers are polymerized to obtain the polymer, but not separately polymerized. Clarification and/or correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brunnemann et al (U.S. 6,001,947).

Brunnemann discloses a coating composition comprising particulate polyacrylic resin (A) and at least one isocyanate crosslinker (abstract). This resin (A) is best depicted by the preferred embodiment in col. 9, lines 15-35.

Acrylate resins which are employed with particular preference are obtained by polymerizing

a1) from 5 to 74% by weight, preferably from 5 to 30% by weight, of component (a1),  
(a2) from 10 to 40% by weight, preferably from 15 to 25% by weight, of component (a2),

(a3) from 10 to 50% by weight, preferably from 15 to 40% by weight, of component (a3),  
(a4) from 0 to 10% by weight, preferably from 0.1 to 6% by weight, of component (a4),  
(a5) less than 5% by weight, preferably less than 3% by weight of component (a5),  
(a6) from 5 to 40% by weight, preferably from 10 to 30% by weight, of component (a6)  
and  
(a7) from 0 to 40% by weight, preferably from 0 to 30% by weight, of component (a7),  
the sum of the proportions by weight of components (a1) to (a7) being in each case  
100% by weight.

**Aromatic vinyl hydrocarbons are employed as component (a6)**, such as styrene, .alpha.-alkylstyrenes, such as alpha.-methylstyrenes, chlorostyrenes, o-, m- and p-methylstyrene, 2,5-dimethylstyrene, p-methoxystyrene,p-tert-butylstyrene, p-dimethylaminostyrene, p-acetamidostyrene and vinyltoluene, with preference being given to the employment of vinyltoluenes and, in particular, of styrene. (col. 8, lines 60-67). This is the **hydrophobic moiety as instantly claimed**.

As component (a4) Brunnemann employs **mono(meth)acryloyloxyethyl maleate, mono(meth)acryloyloxyethyl succinate and mono(meth)acryloyloxyethyl phthalate**. (col. 6, lines 17-21).

These are specific comonomers named in the instant specification as convertible monomers capable of being hydrophobic in acidic environment and hydrophilic in basic environment.

Therefore, Brunnemann anticipates both the chemical identity and the amounts of comonomers in the copolymers. With regard to the new limitation on the particle sizes, the rejection is made in the sense of In re Fitzgerald (205 USPQ 594), (CAFC) wherein the base presumption is that the properties governing the claimed copolymers, if not taught, may be very well met by the copolymers of Brunnemann since the copolymers of Brunnemann are essentially the same and made in essentially the same manner as applicants' polymer. The burden to show that this, in fact, is not the case is shifted to applicants.

The claims also contain a product-by-process issue with regard to the processes concerned with preparation of components of the composition. In this respect the rejection is made in the sense of In re Thorpe, 227 USPQ 964 (CAFC 1985) the stating that even if prepared in a different manner, the product can still be the same (prima facie) as the claimed product.

Also, because of the nature of product-by process claims, the Examiner cannot ordinarily focus on the precise difference between the claimed product and the disclosed product. It is then Applicants" burden to prove that an unobvious difference exists. See In re Marosi, 218 USPQ 289, 292-293 (CAFC 1983).

See also footnote 11 O.G. Notice 1162 59-61, wherein a 35 USC 102/103 rejection is authorized in the case of product-by-process claims because the exact identity of the claimed product or the prior art product cannot be determined by the Examiner.

Consult also, In re Brown, 173 USPQ 685 (CCPA 1972), the Court of Customs and Patent Appeals (CCPA) explicitly approved the 102/103 rejection of a product-by-

process claim over a reference which showed a product which appeared to be identical or only slightly different from the claimed product.

5. Claims 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Akashi et al (U.S. 5,707,543).

Akashi discloses a side chain high molecular weight polymer comprising a liquid crystal monomer and a non-liquid crystal monomer (abstract).

Specific examples of these liquid-crystal monomers include various compounds composed of acrylic ester molecules, methacrylic ester molecules, or vinyl groups bonded to rigid liquid-crystal functional groups such as biphenyl, phenyl benzoate, cyclohexylbenzene, azoxybenzene, **azobenzene**, **azomethine**, phenylpyrimidine, diphenylacetylene, biphenyl benzoate, cyclohexyl biphenyl and terphenyl functional groups, via an alkyl spacer having a predetermined length. (col. 4, lines 4-67).

Examples of the liquid-crystal monomer include those represented by formulae (a)-(i) in col. 4. Among non-liquid-crystal monomers are (meth)acrylic acid, 2-hydroxyethyl (meth)acrylate, 2-hydroxypropyl (meth)acrylate, 2-hydroxy-3-phenoxypropyl (meth)acrylate, glyceryl (meth)acrylate, meth(acrylamide), **2-(meth)acryloyloxyethyl succinate**, **2-(meth)acryloyloxyethyl phthalate**, **2-(meth)acryloyloxyethyl-2-hydroxyethyl phthalate**, 2-(meth)acryloyloxyethyl hexahydrophthalate, 4-((meth)acryloyloxyalkyloxy)benzoic acid, mono-2-(meth)acryloyloxyethyl phosphate, di-2-(meth)acryloyloxyethyl phosphate, hydroxy-substituted styrene, vinylsulfonic acid, 2-propene-1-ol, and 5-hexene-1-ol. (col. 5, lines 10-30). The rejection is based on the

same as that over Brunnemann and the rationale above is incorporated herein in its entirety.

6. Claims 13 and 16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nguyen et al (U.S. 6,057,384). Nguyen discloses particulate polymers having particle size , for example, 220 nm comprising the hydrophilic units of acrylic acid and hydrophobic units of methyl methacrylate and/or hexyl acrylate (see example 3 in col.27). With regard to the properties not disclosed by Nguyen, such as polydispersity and with regard to the process by which the polymer is obtained the rationale applied above incorporated herein by reference.

7. Other prior art references show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva  
Primary Examiner  
Art Unit 1713

March 30, 2004

A handwritten signature in black ink, appearing to read "Tatyana Zalukaeva".